

## WHAT IS CLAIMED IS:

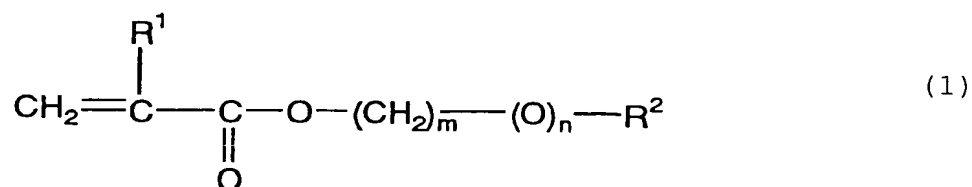
1. A microencapsulated pigment comprising pigment particles having an anionic group on the surface thereof and being coated with a polymer, the polymer comprising a repeating structural unit derived from a cationically polymerizable surface active agent having a cationic group, a hydrophobic group and a polymerizable group and a repeating structural unit derived from an anionically polymerizable surface active agent having an anionic group, a hydrophobic group and a polymerizable group and/or a hydrophilic monomer having an anionic group.

2. A microencapsulated pigment comprising pigment particles having an anionic group on the surface thereof and being coated with a polymer by polymerizing a cationically polymerizable surface active agent having a cationic group, a hydrophobic group and a polymerizable group with an anionically polymerizable surface active agent having an anionic group, a hydrophobic group and a polymerizable group and/or a hydrophilic monomer having an anionic group in an aqueous dispersion in which the pigment particles are dispersed.

3. The microencapsulated pigment according to

claim 1 or 2, wherein the polymer further comprises a repeating structural unit derived from a hydrophobic monomer.

4. The microencapsulated pigment according to any one of claims 1 to 3, wherein the polymer further comprises a repeating structural unit derived from a crosslinkable monomer and/or a repeating structural unit derived from a monomer represented by the following general formula (1):



wherein  $\text{R}^1$  represents a hydrogen atom or a methyl group,  $\text{R}^2$  represents a t-butyl group, an alicyclic hydrocarbon group, an aromatic hydrocarbon group, or a heterocyclic group,  $m$  represents an integer of 0 to 3, and  $n$  represents an integer of 0 or 1.

5. The microencapsulated pigment according to any one of claims 1 to 4, wherein the pigment constituting the pigment particles is carbon black or an organic pigment.

6. The microencapsulated pigment according to any

one of claims 1 to 5, wherein the anionic group of the pigment particles is a sulfonic acid anion group ( $-\text{SO}_3^-$ ) and/or a sulfinic acid anion group ( $-\text{RSO}_2^-$ : R represents a  $\text{C}_1$ - $\text{C}_{12}$  alkyl group or a phenyl group and a modified group thereof).

7. The microencapsulated pigment according to any one of claims 1 to 5, wherein the anionic group of the pigment particles is a carboxylic acid anion group ( $-\text{COO}^-$ ).

8. The microencapsulated pigment according to claim 1 or 2, wherein the cationic group of the cationically polymerizable surface active agent is selected from the group consisting of a primary amine cation, a secondary amine cation, a tertiary amine cation, and a quaternary ammonium cation.

9. The microencapsulated pigment according to claim 1 or 2, wherein the hydrophobic group of the cationically polymerizable surface active agent is selected from the group consisting of an alkyl group, an aryl group, and a combined group thereof.

10. The microencapsulated pigment according to claim 1 or 2, wherein the polymerizable group of the

cationically polymerizable surface active agent is a radically polymerizable unsaturated hydrocarbon group and is selected from the group consisting of a vinyl group, an allyl group, an acryloyl group, a methacryloyl group, a propenyl group, a vinylidene group, and a vinylene group.

11. A process for producing a microencapsulated pigment by coating pigment particles having an anionic group on the surface thereof with a polymer, which comprises:

adding the cationically polymerizable surface active agent to an aqueous dispersion of the pigment particles having an anionic group on the surface thereof, followed by mixing;

adding thereto the anionically polymerizable surface active agent and/or the hydrophilic monomer having an anionic group to emulsify the mixture; and then

adding thereto a polymerization initiator to carry out emulsion polymerization.

12. A process for producing a microencapsulated pigment by coating pigment particles having an anionic group on the surface thereof with a polymer, which comprises:

adding the cationically polymerizable surface

active agent to an aqueous dispersion of the pigment particles having an anionic group on the surface thereof, followed by mixing;

adding thereto a hydrophobic monomer, followed by mixing;

further adding thereto the anionically polymerizable surface active agent and/or the hydrophilic monomer having an anionic group to emulsify the mixture; and then

adding thereto a polymerization initiator to carry out emulsion polymerization.

13. The process for producing a microencapsulated pigment according to claim 12, comprising:

a step of adding a cationically polymerizable surface active agent having a cationic group, a hydrophobic group and a polymerizable group to an aqueous dispersion of the pigment particles having an anionic group on the surface thereof, followed by mixing and treatment by irradiation with an ultrasonic wave;

a step of adding a hydrophobic monomer, followed by mixing;

a step of adding an anionically polymerizable surface active agent having an anionic group, a hydrophobic group and a polymerizable group and/or the hydrophilic

monomer having an anionic group, followed by mixing and treatment by irradiation with an ultrasonic wave; and

a step of adding a polymerization initiator to carry out emulsion polymerization,

wherein the process is carried out in the above order of the steps.

14. The process for producing a microencapsulated pigment according to claim 12, comprising:

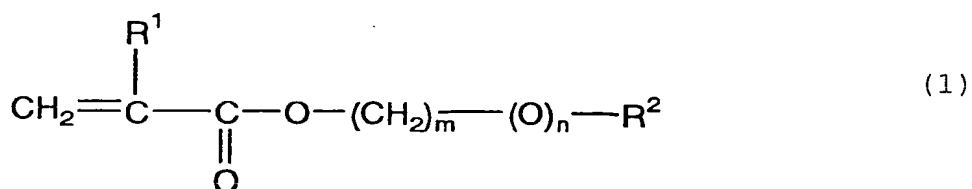
a step of adding a cationically polymerizable surface active agent having a cationic group, a hydrophobic group and a polymerizable group to an aqueous dispersion of the pigment particles having an anionic group on the surface thereof, followed by mixing and treatment by irradiation with an ultrasonic wave;

a step of adding a hydrophobic monomer and a crosslinkable monomer and/or a monomer represented by general formula (1) shown below, followed by mixing;

a step of adding an anionically polymerizable surface active agent having an anionic group, a hydrophobic group and a polymerizable group and/or the hydrophilic monomer having an anionic group, followed by mixing and treatment by irradiation with an ultrasonic wave; and

a step of adding a polymerization initiator to carry out emulsion polymerization,

wherein the process is carried out in the above order of the steps:



wherein R<sup>1</sup> represents a hydrogen atom or a methyl group, R<sup>2</sup> represents a t-butyl group, an alicyclic hydrocarbon group, an aromatic hydrocarbon group, or a heterocyclic group, m represents an integer of 0 to 3, and n represents an integer of 0 or 1.

15. The process for producing a microencapsulated pigment according to any one of claims 11 to 14, wherein the pigment constituting the pigment particles is carbon black or an organic pigment.

16. An aqueous dispersion containing a microencapsulated pigment according to any one of claims 1 to 10.

17. An ink jet recording ink comprising an aqueous dispersion according to claim 16.

18. The ink jet recording ink according to claim 17, which is produced by purification treatment of the aqueous dispersion, wherein the concentration of unreacted anionically polymerizable surface active agent and/or hydrophilic monomer having an anionic group after the purification treatment is 50,000 ppm or less based on the aqueous component in the aqueous dispersion.

19. The ink jet recording ink according to claim 17, which is produced by purification treatment of the aqueous dispersion, wherein the total concentration of unreacted anionically polymerizable surface active agent and/or hydrophilic monomer having an anionic group, and unreacted hydrophobic monomer after the purification treatment is 50,000 ppm or less based on the aqueous component in the aqueous dispersion.

20. The ink jet recording ink according to claim 17, which is produced by purification treatment of the aqueous dispersion, wherein the total concentration of unreacted cationically polymerizable surface active agent, unreacted anionically polymerizable surface active agent and/or hydrophilic monomer having an anionic group, and unreacted hydrophobic monomer after the purification treatment is 50,000 ppm or less based on the aqueous



component in the aqueous dispersion.

21. The ink jet recording ink according to claim 20, wherein the total amount of unreacted cationically polymerizable surface active agent, unreacted anionically polymerizable surface active agent and/or hydrophilic monomer having an anionic group, and unreacted hydrophobic monomer before the purification treatment is each 5 to 40% by weight based on the charged amount thereof.

22. An ink jet recording ink comprising at least a microencapsulated pigment according to any one of claims 1 to 10 and water.

23. The ink jet recording ink according to any one of claims 17 to 22, further comprising polymer fine particles, wherein the polymer fine particles has an anionic group on the surface thereof, a glass transition temperature of 30°C or lower, and a volume average particle size of 10 to 200 nm.

24. The ink jet recording ink according to claim 23, wherein the anionic group on the surface of the polymer fine particles is the same as the anionic group on the surface of the microencapsulated pigment.

25. The ink jet recording ink according to claim 23 or 24, wherein the polymer fine particles has such a reactivity with a bivalent metal salt that time required for decreasing the transmittance of a light having a wavelength of 700 nm to 50% of an initial value is  $1 \times 10^4$  second or less when 3 parts by volume of a 0.1% by weight aqueous emulsion of the polymer fine particles is brought into contact with 1 part by volume of a 1 mol/l aqueous solution of the bivalent metal salt.

26. The ink jet recording ink according to any one of claim 17 to 25, further comprising a water-soluble organic solvent.

27. The ink jet recording ink according to claim 26, wherein the water-soluble organic solvent is a high-boiling water-soluble organic solvent having a boiling point of 180°C or higher.

28. The ink jet recording ink according to claim 26 or 27, wherein the water-soluble organic solvent is glycerin.

29. The ink jet recording ink according to any

one of claims 26 to 28, wherein the water-soluble organic solvent is one or more compounds selected from the group consisting of an alkyl ether of a polyhydric alcohol and/or a 1,2-alkyldiol.

30. The ink jet recording ink according to any one of claims 17 to 29, further comprising a solid wetting agent in an amount of 3 to 20% by weight based on the total weight of the ink jet recording ink.

31. The ink jet recording ink according to claim 30, wherein the solid wetting agent is one or more compounds selected from the group consisting of trimethylolpropane, 1,2,6-hexanetriol, a saccharide, and a sugar alcohol.